

# FCX - A SERIES DIFFERENTIAL PRESSURE TRANSMITTER

## DATA SHEET

FHC, FKC...2

The FCX -A differential pressure transmitter accurately measures differential pressure, liquid level or gauge pressure and transmits a proportional 4 to 20mA signal. The transmitter utilizes a unique micromachined capacitive silicon sensor with state-of-the-art microprocessor technology to provide exceptional performance and functionality.



## FEATURES

### 1. High accuracy

0.07% accuracy for all calibrated spans is a standard feature for all DP models covering 0.1kPa {1m bar} draft range to 3000kPa {30 bar} high differential. Fuji's micro-capacitance silicon sensor assures this accuracy for all elevated or suppressed calibration ranges without additional adjustment.

### 2. Minimum environmental influence

The "Advanced Floating Cell" design which protects the pressure sensor against changes in temperature, static pressure, and overpressure substantially reduces total measurement error in actual field applications.

### 3. Smart / Traditional convertible

Fuji micro-electronics manufacturing technology offers free selection of Smart / Traditional transmitters.

A small plug-in communication module upgrades your model FHC to smart type model FKC, which has full remote communication capabilities. A Hand Held Communicator (HHC), model FXW can remotely display or reconfigure all transmitter parameters at any point on the loop without affecting the transmitter signal.

### 4. Fuji/HART® bilingual communication module

The communication module is "bilingual" to speak both Fuji proprietary protocol and HART®. Any HART® compatible devices can communicate with FCX-A/C series transmitters.

### 5. Application flexibility

Example options that render the FCX-A suitable for almost any process applications includes.

- Analog indicator at either the electronics side or terminal side
- Full range of hazardous area approvals
- Built-in RFI filter and lightning arrestor
- 4 1/2 digits LCD meter
- Stainless steel electronics housing
- Wide selection of materials

## SPECIFICATIONS

### Functional specifications

#### Type :

Model FHC : 4 to 20mA, Traditional type

Model FKC : 4 to 20mA with digital signal

#### Service :

Liquid, gas or vapour

#### Static pressure, span, and range limit:

Type	Static pressure [MPa] {bar}	Span limit [kPa] {m bar}			Range limit [kPa] {m bar}
		Min.		Max.	
		FHC	FKC	FHC/FKC	
F□C□11	-0.1 to + 3.2 { -1 to + 32 }	0.1 { 1 }	0.1 { 1 }	1 { 10 }	+/- 1 { +/- 10 }
F□C□22	-0.1 to + 10 { -1 to + 100 }	0.6 { 6 }	0.1 { 1 }	6 { 60 }	+/- 6 { +/- 60 }
F□C□23	-0.1 to + 10 { -1 to + 100 }	3.2 { 32 }	0.32 { 3.2 }	32 { 320 }	+/- 32 { +/- 320 }
F□C□25	-0.1 to + 10 { -1 to + 100 }	13 { 130 }	1.3 { 13 }	130 { 1300 }	+/- 130 { +/- 1300 }
F□C□26	-0.1 to + 10 { -1 to + 100 }	50 { 500 }	5 { 50 }	500 { 5000 }	+/- 500 { +/- 5000 }
F□C□33	-0.1 to + 16 { -1 to + 160 }	3.2 { 32 }	0.32 { 3.2 }	32 { 320 }	+/- 32 { +/- 320 }
F□C□35	-0.1 to + 16 { -1 to + 160 }	13 { 130 }	1.3 { 13 }	130 { 1300 }	+/- 130 { +/- 1300 }
F□C□36	-0.1 to + 16 { -1 to + 160 }	50 { 500 }	5 { 50 }	500 { 5000 }	+/- 500 { +/- 5000 }
F□C□38	-0.1 to + 16 { -1 to + 160 }	300 { 3000 }	30 { 300 }	3000 { 30000 }	+/- 3000 { +/- 30000 }
F□C□43	-0.1 to + 42 { -1 to + 420 }	3.2 { 32 }	0.32 { 3.2 }	32 { 320 }	+/- 32 { +/- 320 }
F□C□45	-0.1 to + 42 { -1 to + 420 }	13 { 130 }	1.3 { 13 }	130 { 1300 }	+/- 130 { +/- 1300 }
F□C□46	-0.1 to + 42 { -1 to + 420 }	50 { 500 }	5 { 50 }	500 { 5000 }	+/- 500 { +/- 5000 }
F□C□48	-0.1 to + 42 { -1 to + 420 }	300 { 3000 }	30 { 300 }	3000 { 30000 }	+/- 3000 { +/- 30000 }

#### Remark :

To minimize environmental influence, span should be greater than 1/40 of the max. span in most applications.

- Lower limit of static pressure (vacuum limit) :

Silicone fill sensor : See Fig. 1

F□C□38 and F□C□48 : -0.5kgf/cm<sup>2</sup>

Fluorinated fill sensor :

66kPa abs (500mmHg abs) at temperature below 80°C

- The maximum span of each sensor can be converted to different units using below factors.

1MPa=10<sup>3</sup>KPa=10bar=10.19716kgf/cm<sup>2</sup>=145.0377psi

1kpa=10mbar=101.9716mmH O=4.01463inH O

**Over range limit :**

To maximum static pressure limit

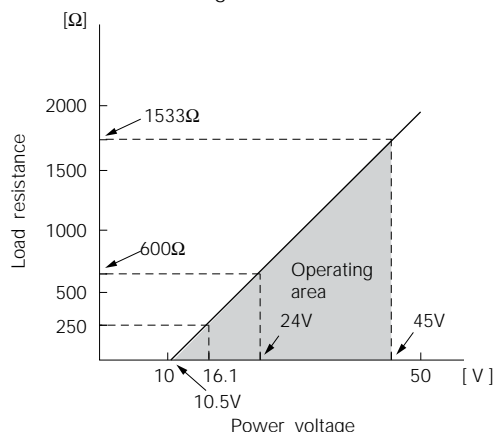
**Output signal :**

Model FHC: 4 to 20mA DC 2-wire, linear signal  
 Model FKC: 4 to 20mA DC (linear or square root) with digital signal superimposed on the 4 to 20mA signal

**Power supply :**

Transmitter operates on 10.5V to 45V DC at transmitter terminals.  
 10.5V to 32V DC for the units with optional arrester.

**Load limitations :** see figure below



Note : For communication with FXW, min. of 250 Ω required.

**Hazardous locations :**

Designed to meet international intrinsic safety and flameproof (explosionproof) standards.  
 Please consult the code symbols some pages further on, to know the different types of approvals (digit 10).  
 Consult FUJI for status.

**Zero/span adjustment :**

Model FHC :  
 Zero is adjustable from the external adjustment screw.  
 The adjustment screw can also function to adjust span when MODE SWITCH (located on the electronics unit) is in the span mode. INHIBIT mode to disable the adjustment screw is also available.

Model FKC :  
 Zero and span are adjustable from the HHC. Zero is also adjustable externally from the adjustment screw.

**Damping :** (adjustable electrical damping)

Model FHC :  
 The time constant is adjustable to 0, 0.3, 1.2, 4.8, or 19.2 seconds.

Model FKC :  
 The time constant is adjustable between 0 to 38.4 sec (4 steps).

**Zero elevation/suppression :**

-100% to +100% of URL

**Normal/reverse action :**

Model FHC :  
 Selectable by moving a jumper pin located on the electronics unit.

Model FKC:  
 Selectable from HHC.

**Indication :**

Analog indicator or 4 1/2 digit LCD meter, as specified.

**Burnout direction :**

If self-diagnostic detect transmitter failure, the analog signal will be driven to either "Output Hold", "Output Overscale" or "Output Underscale" modes.

- Model FHC :

Unless otherwise specified in the order, the transmitter will be shipped in "Output Hold" mode.

(Output signal just before failure happens is maintained)

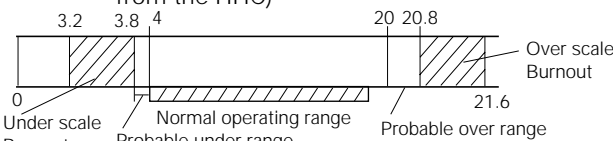
- Model FKC : selected from HHC

"Output Hold" :

Output signal is hold as the value just before failure happens.

"Output Overscale" : approx. 21,6 mA (Adjustable within the range 20,8 mA to 21,6 mA from the HHC)

"Output Underscale" : approx. 3,8 mA (Adjustable within the range 3,2 mA to 3,8 mA from the HHC)



**Loop-check output :**

Model FHC:

Transmitter can output constant signal of 4mA, 12mA, or 20mA if MODE SWITCH is set to the loop check mode.

Model FKC:

Transmitter can be configured to provide constant signal 3.8mA through 21.6mA by HHC.

**Temperature limit :**

Ambient :

- 40 to +85°C  
 (-20 to +80°C for LCD indicator)  
 (- 40 to +60°C for arrester option)  
 (-10 to +60°C for fluorinated oil filled transmitters)  
 For explosionproof units (flameproof or intrinsic safety), ambient temperature must be within the limits specified in each standard.

Process :

- 40 to +120°C for silicone fill sensor  
 -20 to +80°C for fluorinated oil fill sensor

Storage : - 40 to +90°C

**Humidity limit :**

0 to 100% RH

**Communication :** (Model FKC only)

With HHC (Model FXW, consult Data Sheet No. EDS8-47), following information can be remotely displayed or reconfigured.

Items	HART® PROTOCOL		FUJI PROTOCOL	
	Display	Set	Display	Set
Tag n°	Yes	Yes	Yes	Yes
Model n°	-	-	Yes	Yes
Serial n°	Yes	-	Yes	-
Engineering unit	Yes	Yes	Yes	Yes
Range limit	Yes	-	Yes	-
Measuring range	Yes	Yes	Yes	Yes
Damping	Yes	Yes	Yes	Yes
Output mode	Yes	Yes	Yes	Yes
Burnout direction	Yes	-	Yes	Yes
Adjustment	Yes	Yes	Yes	Yes
Output adjust	Yes	Yes	Yes	Yes
Data	Yes	-	Yes	-
Self diagnoses	Yes	-	Yes	-
Printer	-	-	Yes	-
External switch lock	Yes	Yes	Yes	Yes
Transmitter display (*)	-	-	Yes	Yes
Linearise (**)	-	-	Yes	Yes
Rerange (**)	-	-	Yes	Yes

Note: (\*) HHC's version must be more than 5.0 ( or FXW□□□□1-□2), to use this function.

(\*\*)HHC's version must be more than 5.3 and Amplifier unit version

**Programmable output linearization function :**

In smart version, output signal can be characterized with "14 points linear approximation function" from HHC.

**Performance specifications for linear output**

**Accuracy rating :** (including linearity, hysteresis, and repeatability)

**Max span above 32kPa model :**

For spans greater than 1/10 of URL :  
±0.07% of span

For spans below 1/10 of URL (Model FKC only) :

$$\pm \left( 0.02 + 0.05 \frac{0.1 \times \text{URL}}{\text{Span}} \right) \% \text{ of span}$$

**Max span 1kPa, 6kPa model :**

For spans greater than 1/10 of URL :

±0.1% of span

For spans below 1/10 of URL (Model FKC only) :

$$\pm \left( 0.05 + 0.05 \frac{0.1 \times \text{URL}}{\text{Span}} \right) \% \text{ of span}$$

**Linearity :**

0.05% of calibrated span

**Stability :**

±0.1% of upper range limit (URL) for 24 months

**Temperature effect:**

Effects per 28°C change between the limits of - 40°C and +85°C

Range code (6th digit in Code symbols)	Zero shift	Total effect
"1" /1kPa {10mbar} max. span "2" /6kPa {60mbar} max. span	$\pm \left( 0.125 + 0.1 \frac{\text{URL}}{\text{Span}} \right) \% / 28^\circ\text{C}$	$\pm \left( 0.15 + 0.1 \frac{\text{URL}}{\text{Span}} \right) \% / 28^\circ\text{C}$
"3" /32kPa {320mbar} max. span "5" /130kPa {1300mbar} max. span "6" /500kPa {5000mbar} max. span "8" /3000kPa {30000mbar} max. span	$\pm \left( 0.1 + 0.025 \frac{\text{URL}}{\text{Span}} \right) \% / 28^\circ\text{C}$	$\pm \left( 0.125 + 0.025 \frac{\text{URL}}{\text{Span}} \right) \% / 28^\circ\text{C}$

Double the effects for material code (7th digit in Codesymbols) "H", "M", "T", "B", "L" and "U".

**Static pressure effect :**

Static pressure code (5th digit in Code symbols)	Zero shift (% of URL)	Span shift (% of calibrated span)
"1" /1kPa {10m bar} sensor "2" /6kPa {60 m bar} sensor	±0.1% / 1MPa{10bar} ±0.1% / 3.2MPa{32bar}	-0.2% /3.2MPa{32bar} -0.2% /3.2MPa{32bar}
"2" "3" "4"	±0.05%/10MPa{100bar}	-0.2%/10MPa{100bar}

Double the Zero shift for material code (7th digit in Code symbols) "H", "M", "T", "B", "L" and "U".

**Overrange effect :**

Static pressure code (5th digit in Code symbols)	Zero shift (% of URL)
"1" / 1kPa {10m bar} sensor "2" / 6kPa {60m bar} sensor "2" "3" "4"	±0.3% / 1MPa {10bar } ±0.3% /3.2MPa {32bar } ±0.1% /10MPa {100bar } ±0.1% /16MPa {160bar } ±0.17% /42MPa {420 bar } (* 1)

Double the effects for material code (7th digit in Code symbols)"H", "M", "T", "B", "L" and "U".

Note : (\*1) In case of 6th code "5"

**Supply voltage effect :**

Less than 0.05% of calibrated span per 10V

**RFI effect :**

Less than 0.2% of URL for the frequencies of 20 to 1000MHz and field strength 30 V/m when electronics covers on.

(Classification:2-abc :0.2% span per SAMA PMC 33.1)

**Step response :** (without electrical damping)

Range code	Time constant	Dead time
"1"	0.8 s	approx. 0.3 s
"2"	0.5 s	
"3"	0.3 s	
"4" through "8"	0.2 s	

**Mounting position effect :**

Zero shift :

Less than 0.12kPa {1.2m bar} for a 10° tilt in any plane.  
No effect on span.

This error can be corrected by adjusting Zero.  
(Double the effect for fluorinated fill sensors)

**Dielectric strength :**

500V AC, 50/60Hz 1 min., between circuit and earth.

**Insulation resistance :**

More than 100MΩ at 500V DC.

**Turn-on time :**

4 sec.

**Internal resistance for external field indicator :**

12Ω or less.

**Performance specifications for square root output : (Model FKC only)**

**Accuracy rating :**

Output	Span	
	over 0.1 × URL	below 0.1 × URL
50 to 100%	±0.07%	±(0.02+0.05 × 0.1 × URL/Span)%
20 to 50%	±0.175%	±2.5 × (0.02+0.05 × 0.1 × URL/Span)%
10 to 20%	±0.35%	±5 × (0.02+0.05 × 0.1 × URL/Span)%

**Max. span 1kPa, 6kPa model :**

Output	Accuracy
50 to 100%	±0.1%
20 to 50%	±0.25%
10 to 20%	±0.5%

**Temperature effect :**

Effect per 28°C change between the limits of - 40°C and +85°C

Range code	Shift at 20% output point
"1" and "2"	$\pm \left( 0.3 + 0.25 \frac{\text{URL}}{\text{Span}} \right) \% / 28^\circ\text{C}$
"3" through "8"	$\pm \left( 0.25 + 0.0625 \frac{\text{URL}}{\text{Span}} \right) \% / 28^\circ\text{C}$

**Low flow cut-off :**

Customer configurable for any point between 7 to 20% of output.

**Physical specifications**

**Electrical connections :**

G1/2, 1/2-14 NPT, Pg13.5, or M20x1.5 conduit, as specified.

**Process connections :**

1/4-18 NPT or Rc1/4 on 54mm centers, as specified.  
Meets DIN 19213.

**Process-wetted parts material :**

Material code (7th digit in Code symbols)	Process cover	Diaphragm	Wetted sensor body	Vent/drain
V	316 ss	316L ss	316 ss	316 ss
H	316 ss or PVDF	Hastelloy-C	Hastelloy-C lining	316 ss
M	316 ss or PVDF	Monel	Monel lining	316 ss
T	316 ss or PVDF	Tantalum	Tantalum lining	316 ss
B	Hastelloy-C lining	Hastelloy-C	Hastelloy-C lining	Hastelloy-C
L	Monel lining	Monel	Monel lining	Monel
U	Tantalum lining	Tantalum	Tantalum lining	Tantalum

**Remark :**

Sensor gasket : viton o-ring or PTFE square section gasket  
 Availability of above material design depends on ranges and static pressure.  
 Refer to "Code symbols".

**Non-wetted parts material :**

**Electronics housing :**

Low copper die cast aluminum alloy (std), finished with polyester coating, or 316 stainless steel, as specified.

**Bolts and nuts:**

Cr-Mo alloy (standard), 316 stainless steel (for static pressure code "1", "2", and "3" only), or 630 stainless steel (for static pressure code "3" and "4" only). Static pressure rating for code "3" with 316 stainless steel bolts is degraded to 10MPa.

**Fill fluid:**

Silicone oil (standard) or fluorinated oil (Daifloil)

**Mounting bracket:**

Carbon steel with epoxy coating or 304 stainless steel, as specified

**Environmental protection :**

IEC IP67 or NEMA 4X

**Mounting :**

On 50mm (2") pipe using mounting bracket, direct wall mounting, or direct process mounting.

**Mass(weight) :**

Transmitter approximately 4.4kg without options.  
 Add :0.5kg for mounting bracket  
 0.8kg for indicator option  
 4.5kg for stainless steel housing (option)

**Optional features**

**Indicator :**

A plug-in analog indicator (1.5% accuracy) can be located in the electronics compartment or in the terminal box of the housing.

An optional 4 1/2 digits LCD meter is also available.

**Arrester :**

A built-in arrester protects the electronics from lightning surges.

Lightning surge immunity : 4kV (1.2x50µs)

**Oxygen service :**

Special cleaning procedures are followed throughout the process to maintain all process wetted parts oil-free.

The fill fluid is fluorinated oil.

**Chlorine service :**

The fill fluid is fluorinated oil.

**Degreasing :**

Process-wetted parts are cleaned, but the fill fluid is standard silicone oil.

Not for use on oxygen or chlorine measurement.

**NACE specification :**

Metallic materials for all pressure boundary parts comply with NACE MR-01-75. 316 bolts and nuts ASTM B7M or L7M bolts and 2HM nuts (Class II) are available. Static pressure rating for code "3" (16 MPa) is degraded to 10MPa.

**Vacuum service :**

Special silicone oil and filling procedure are applied.

See below figure.

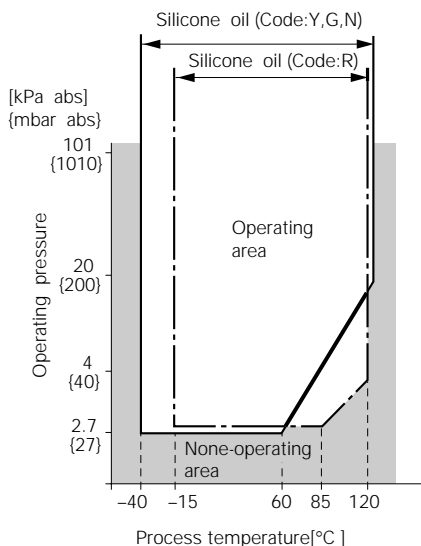


Fig.1Relation between process temperature and operating pressure

**Customer tag :**

A stainless steel tag with customer tag data is wired to the transmitter.

**ACCESSORIES**

**Oval flanges :**

Converts process connection to 1/2-14 NPT; material : 316 ss

**Equalizing valves :**

Available in carbon steel or in 316 stainless steel and in pressure rating 16MPa or 42MPa.

**Hand-held communicator :**

(Model FXW, refer to Data Sheet No. EDS 8-47)

**Communication module :** (standard for model FKC)

When using this module for model FHC, remote setting function becomes available.

**Remark :**

When the communication module is connected, the operation mode of external zero/span adjustable screw is changed to zero adjustment.

# CODE SYMBOLS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Description																																																																																																																																																																																																																																																																																																																																										
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C	Hast. C lining	2 2 V	-1 to 100 bar	60/600 mm WC	316 SS	316 SS	2 2 H			Hast. C	Hast. C lining	3 3 V			316 SS	316 SS	3 3 H			Hast. C	Hast. C lining	3 3 M			316 SS	Monel lining	3 3 C (*4)			316 SS	Hydroseal	3 3 T			316 SS	Tantalum	3 5 V			316 SS	316 SS	3 5 H			Hast. C	Hast. C lining	3 5 M			316 SS	Monel lining	3 5 C (*4)			316 SS	Hydroseal	3 5 T			316 SS	Tantalum	3 6 V			316 SS	Hast. C	3 6 H			316 SS	Hast. C lining	3 6 M			316 SS	Monel lining	3 6 T			316 SS	Tantalum lining	3 8 V			316 SS	Hast. C				316 SS	316 SS	4 3 V			316 SS	316 SS	4 3 H			Hast. C	Hast. C lining	4 3 M			316 SS	Monel lining	4 3 C (*4)			316 SS	Hydroseal	4 5 V			316 SS	316 SS	4 5 H			Hast. C	Hast. C lining	4 5 M			316 SS	Monel lining	4 5 C (*4)			316 SS	Hydroseal	4 6 V			316 SS	Hast. C	4 6 H			316 SS	Hast. C lining	4 6 M			316 SS	Monel lining	4 8 V			316 SS	Hast. C				316 SS	316 SS	(*5) 2 3 B			Hast. C lining	Hast. C lining	(*5) 2 3 L			Monel lining	Monel lining	(*5) 2 3 U			Tantalum lining	Tantalum lining	(*5) 2 5 B			Hast. C lining	Hast. C lining	(*5) 2 5 L			Monel lining	Monel lining	(*5) 2 5 U			Tantalum lining	Tantalum lining	(*5) 2 6 B			Hast. C lining	Hast. C lining	(*5) 2 6 L			Monel lining	Monel lining	(*5) 2 6 U			Tantalum lining	Tantalum lining	(*6) 8 1 H			10/100 mmWC	PVDF Insert	(*6) 8 2 H			60/600 mmWC	PVDF Insert	(*6) 8 3 H			320 /3200 mm WC	PVDF Insert	(*6) 8 3 M			320 /3200 mm WC	PVDF Insert	(*6) 8 3 T			320 /3200 mm WC	PVDF Insert	(*6) 8 5 H			1,3 /13 m WC	PVDF Insert	(*6) 8 5 M			1,3 /13 m WC	PVDF Insert	(*6) 8 5 T			1,3 /13 m WC	PVDF Insert	(*6) 8 6 H			5 /50 m WC	PVDF Insert	(*6) 8 6 M			5 /50 m WC	PVDF Insert	(*6) 8 6 T			5 /50 m WC	PVDF Insert	(*6) 9 1 H			10/100 mmWC	PVDF Insert	(*6) 9 2 H			60/600 mmWC	PVDF Insert	(*6) 9 3 H			320 /3200 mm WC	PVDF Insert	(*6) 9 3 M			320 /3200 mm WC	PVDF Insert	(*6) 9 3 T			320 /3200 mm WC	PVDF Insert	(*6) 9 5 H			1,3 /13 m WC	PVDF Insert	(*6) 9 5 M			1,3 /13 m WC	PVDF Insert	(*6) 9 5 T			1,3 /13 m WC	PVDF Insert	(*6) 9 6 H			5 /50 m WC	PVDF Insert	(*6) 9 6 M			5 /50 m WC	PVDF Insert	(*6) 9 6 T			5 /50 m WC	PVDF Insert
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F	K	C					2	-						

<b>Indicator &amp; Arrester</b>																
Indicator																
Arrester																
2	-	A													None	none
2	-	B													Analog, 0-100% linear scale	none
2	-	C													Analog, 0-100% √ scale	none
2	-	D													Analog, Custom scale	none
2	-	J													Analog, double scale	none
2	-	E													none	yes
2	-	F													Analog, 0-100% linear scale	yes
2	-	G													Analog, 0-100% √ scale	yes
2	-	H													Analog, Custom scale	yes
2	-	K													Analog, double scale	yes
2	-	L													Digital, 0-100%	none
2	-	P													Digital, Custom scale (FKC only)	none
2	-	M													Digital, 0-100% √ scale	none
2	-	Q													Digital, 0-100%	yes
2	-	S													Digital, Custom scale (FKC only)	yes
2	-	N													Digital, 0-100% √ scale	yes
<b>Approvals for hazardous locations (consult FUJI for availability)</b>																
A															None (standard)	
X															Flameproof housing <<d>> II C T5/T6 (LCIE)	
K															Intrinsic safety CENELEC EEx ia IIC T4/T5	
F															Flameproof housing <<d>> II C T5/T6 (ISseP)	
D															FM - Flameproof housing	
E															CSA - Flameproof housing	
M															BASEEFA - Flameproof housing (Conduit seal)	
N															BASEEFA - Flameproof housing (Cable gland seal) - (Conduit connection G 1/2 )	
R															SAA - Flameproof housing (Conduit seal)	
S															SAA - Flameproof housing (Cable gland seal) - (Conduit connection G 1/2 )	
H															FM - Intrinsic safety & Nonincendive	
J															CSA - Intrinsic safety & Nonincendive	
P															BASEEFA - Type N	
T															SAA - Intrinsic safety	
Q															SAA -Type N	
<b>Side vent/drain &amp; mounting bracket</b>																
															Side vent/drain	mounting bracket
A															none	none
B															none	yes, CS
C															none	yes, SS
D															yes	none
E															yes	yes, CS
F															yes	yes, SS
<b>SS parts</b>																
															SS tag plate	SS housing
Y															none	none
B															yes	none
C															none	yes
E															yes	yes
<b>Special applications &amp; fill fluid</b>																
															Treatment	Fill fluid
Y															none (std)	silicone oil
W															none (std)	fluorinated oil
G															degreasing	silicone oil
A															oxygen serv.	fluorinated oil (only w/digit7=V)
D															chlorine serv.	fluorinated oil (only w/digit 7=H,T,B,U)
N															NACE	silicone oil
R															vacuum serv.	silicone oil
<b>Process cover gasket</b>																
															- A	Viton
															- C	PTFE square section gasket in SS flange (FEF design)
															(*6) - D	PTFE square section gasket in PVDF insert
<b>Bolts/screws material</b>																
															A	Cr-Mo (standard)
															C	Recommandation NACE (ASTM A193 B7M bolts & A 194 2HM nuts)
															D	Recommandation NACE (ASTM A320 L7M bolts & A 194 2HM nuts, for Canada)
															(*3) E	SS 316/316 ((bolt/nuts)
															F	SS 630/304 (bolt/nuts)

- \* Notes:
- 1-The thread is M12, if static pressure 420 bar
  - 2- Minimum spans are for model FHC - 100:1 turn down is possible with model FK C, but it should be used at a span greater than 1/40 of the maximum span for better performance.
  - 3- Max. static pressure 100 bar for SS 316 bolts/nuts; for static pressure > 100 bar, please specify: SS 630 bolts
  - 4- Gold/ceramics coating for Hydrogen service (Hydroseal)
  - 5-Process cover with lining has only side vent-drain facility
  - 6-Process cover with PVDF insert with 1/2-18 NPT side process connection/no vent drain, other upon request  
Square section PTFE gasket

Test certificate based on 5 measuring points up and down (option)

# OUTLINE DIAGRAM (Unit:mm)

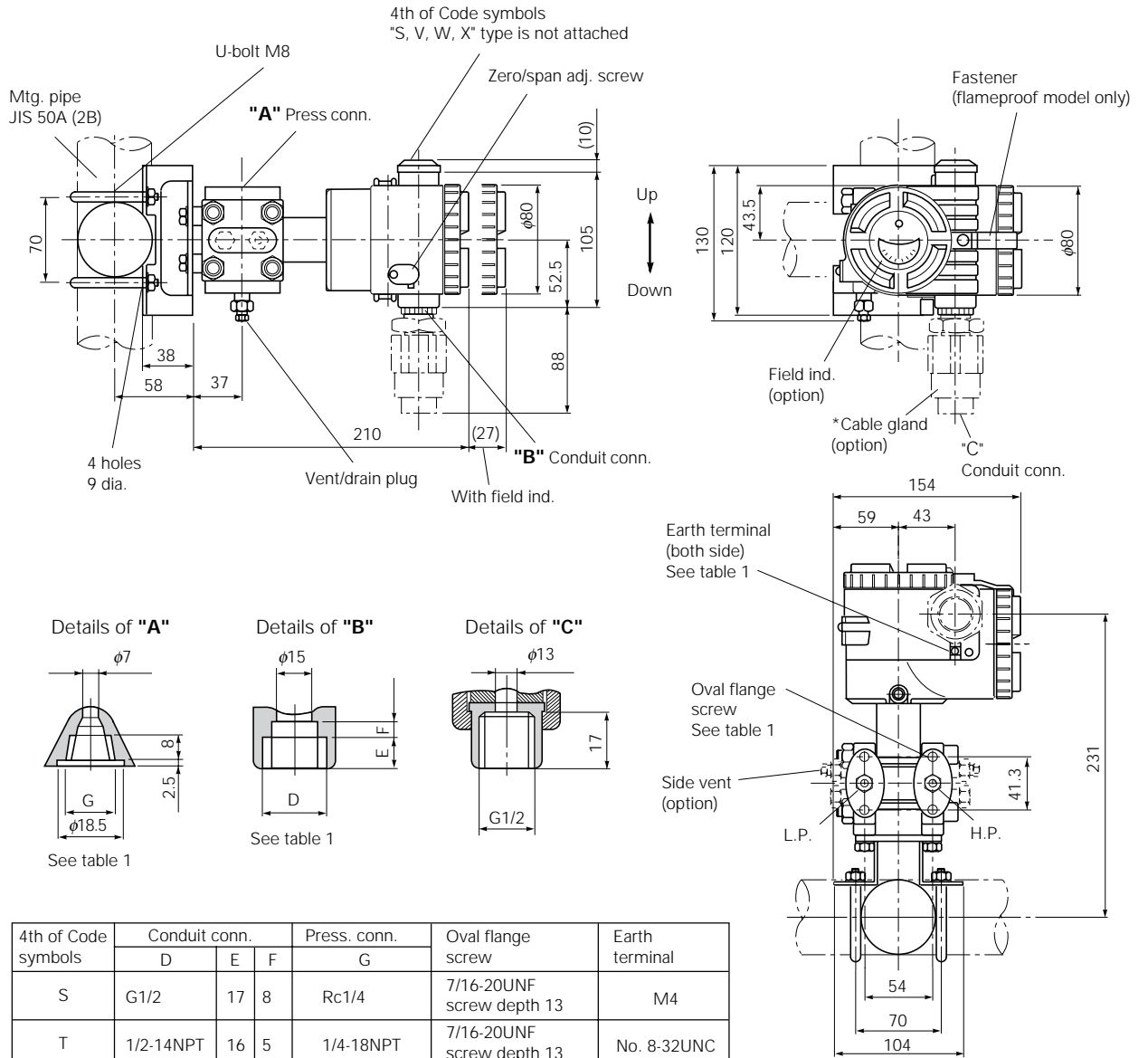
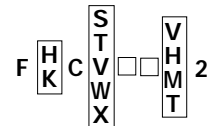
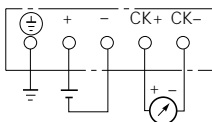


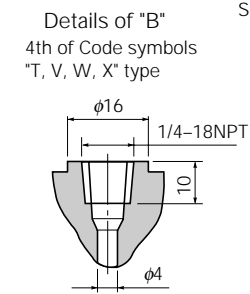
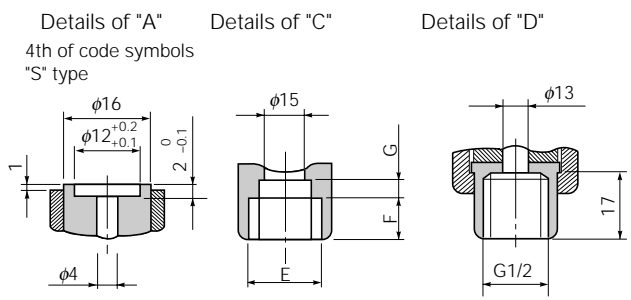
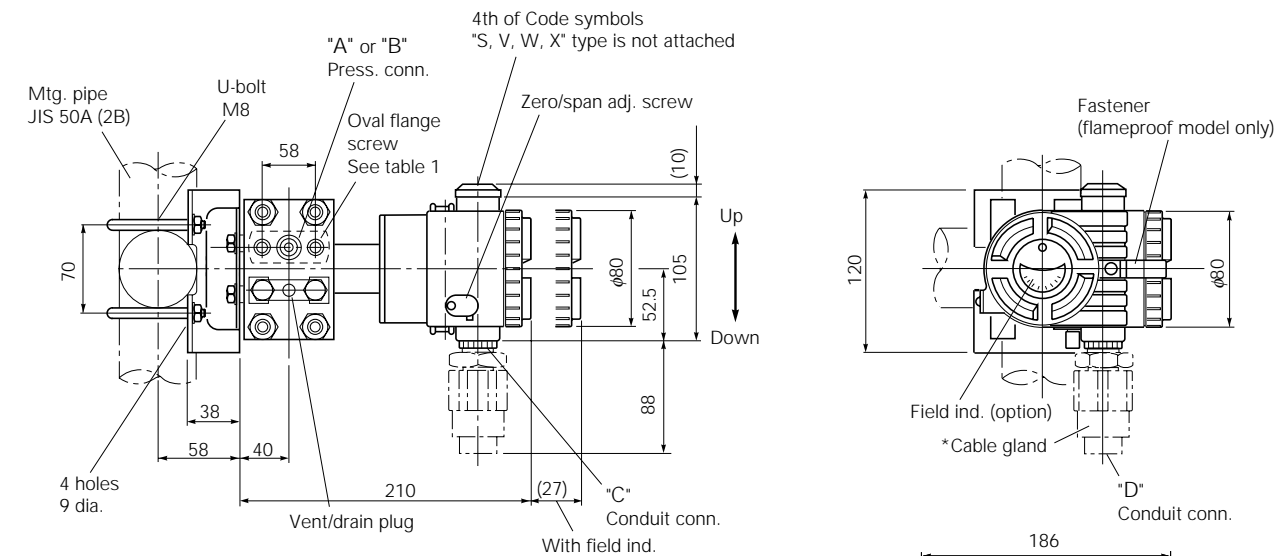
Table 1

Note \*: Cable gland is supplied in case of flameproof packing type.  
ø11 cable is suitable.



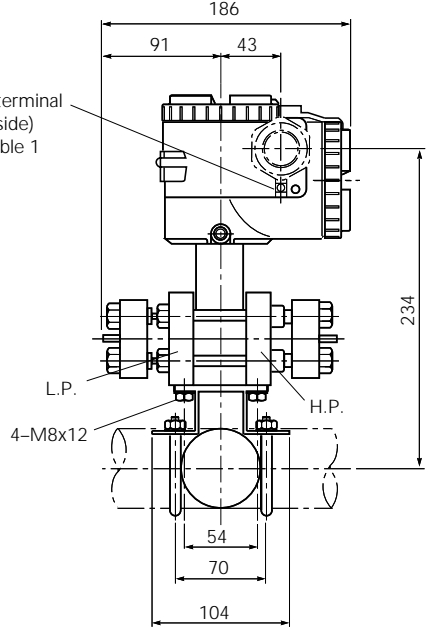
## CONNECTION DIAGRAM



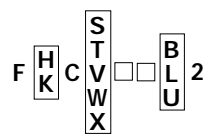
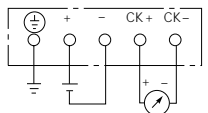


4th of Code symbols	Conduit conn.			Oval flange screw	Earth terminal
	E	F	G		
S	G1/2	17	8	7/16-20UNF screw depth 13	M4
T	1/2-14NPT	16	5	7/16-20UNF screw depth 13	No. 8-32UNC
V	Pg13.5	8	4.5	M10 screw depth 13	M4
W	M20x1.5	16	5	M10 screw depth 13	M4
X	Pg13.5	8	4.5	7/16-20UNF screw depth 13	M4

Table 1



CONNECTION DIAGRAM



The product conforms to the requirements of the Electromagnetic compatibility Directive 89/336/EEC as detailed within the technical construction file number TN510412.

The applicable standards used to demonstrate compliance are :

EMI (Emission) EN 50081-1 :-1992

Test item	Frequency ranne	Basic standard
Applicable Electromagnetic Radiation Disturbance	30-1000MHz	EN55022 Class B

EMS (Immunity) EN 50082-1 :-1992

No.	Test item	Test specification	Basic standard	Performance criteria
1	Electrostatic discharge	8kV (Air)	IEC 801-2 : 1984	B
2	Radio-frequency electromagnetic field.	27-500MHz 3V/m (Unmodulated)	IEC 801-3 : 1984	A
3	Fast transients common mode	0.5kV, 5/50(Tr/Th)ns 5kHz Rep.	IEC 801-4 : 1988	B

"LVD - The transmitter is not covered by the requirements of the LVD standard."